

AMENDMENTS TO THE SPECIFICATION:

Please add the following *new* paragraph on page 1, between lines 2 and 3:

CROSS-REFERENCE TO RELATED APPLICATIONS

This U.S. National stage application claims priority under 35 U.S.C. §119(a) to Japanese Patent Application No. 2003-165131, filed in Japan on June 10, 2003, the entire contents of which are hereby incorporated herein by reference.

Please replace the heading at page 3, line 23, with the following rewritten version:

BRIEF SUMMARY DISCLOSURE OF THE INVENTION

Please replace the paragraph beginning at page 4, line 1 with the following rewritten version:

Specifically, a first aspect of the present invention is directed to a rotary fluid machine including: a cylinder 1c having a cylinder body 2 and plates 7 and 8 arranged at both end surfaces of the cylinder body 2, one of the plates 7 and 8 having a high pressure port 10; and a roller 3 placed in the cylinder 1c, wherein the end surfaces of the roller 3 which are slidably in contact with the plates 7 and 8 of the cylinder 1c have different widths and the roller 3 is arranged such that one of the end surfaces having a larger width than the width of the other end surface faces the high pressure port 10.

Please replace the paragraph beginning at page 4, line 8 with the following rewritten version:

According to a second aspect of the present invention relating to the first aspect of the present invention, the roller 3 is made of a sintered alloy.

Please replace the paragraph beginning at page 4, line 10 with the following rewritten version:

According to a third aspect of the present invention relating to the first or second aspect of the present invention, the cylinder 1c includes two cylinder bodies 25 and 26. A

partition plate 27 sandwiched between the cylinder bodies 25 and 26 and end plates 7 and 8 arranged outside the cylinder bodies 25 and 26 are provided as the plates. The roller 3 is arranged in each of the cylinder bodies 25 and 26 to have a difference in rotational phase. The end plates 7 and 8 are provided with high pressure ports 10, respectively. The end surfaces of each of the rollers 3 which are slidably in contact with the plates 7 or 8 and 27 of the cylinder 1c have different widths. Each of the rollers 3 is arranged such that one of the end surfaces having a larger width faces the end plate 7 or 8 and the other end surface having a smaller width faces the partition plate 27.

Please replace the paragraph beginning at page 4, line 20 with the following rewritten version:

According to a fourth aspect of the present invention relating to the first or second aspect of the present invention, the cylinder 1c is arranged in an airtight container 9 and includes two cylinder bodies 25 and 26. A partition plate 27 sandwiched between the cylinder bodies 25 and 26 and end plates 7 and 8 arranged outside the cylinder bodies 25 and 26 are provided as the plates. The roller 3 is arranged in each of the cylinder bodies 25 and 26. The end plates 7 and 8 are provided with high pressure ports 10, respectively. The end surfaces of each of the rollers 3 which are slidably in contact with the plates 7 or 8 and 27 of the cylinder 1c are provided with cut portions 3a and 3b, respectively, such that one of the end surfaces facing the end plate 7 or 8 has a larger width than the width of the other end surface facing the partition plate 27. Gas discharged through the high pressure ports is temporarily retained in the airtight container 9.

Please replace the paragraph beginning at page 5, line 4 with the following rewritten version:

Specifically, according to the first aspect of the present invention, the cylinder body 2 is sandwiched between the plates 7 and 8 and the roller 3 is placed in the cylinder body 2. The high pressure port 10 is formed in one of the plates 7 and 8. The end surfaces of the roller 3 which are slidably in contact with the plates 7 and 8 have different widths. The roller 3 is arranged such that one of the end surfaces having a larger width faces one of the plates 7

and 8 having the high pressure port 10 and the other end surface having a smaller width faces the other one of the plates 7 and 8. More specifically, the internal edge of the end surface of the roller 3 facing the high pressure port 10 is positioned more inside than the internal edge of the opposite end surface. Since the internal edge of the end surface of the roller 3 facing the high pressure port 10 is positioned more inside, even if the roller 3 is incorporated in a machine in which the high pressure port 10 is provided more inside, space along the inner periphery of the roller 3 and space along the outer periphery of the roller 3 are less likely to communicate with each other. Further, even if the roller 3 is incorporated in a compressor 1 having a larger high pressure port 10, the internal and external spaces of the roller 3 are less likely to communicate with each other because the internal edge of the end surface of the roller 3 facing the high pressure port 10 is positioned more inside.

Please replace the paragraph beginning at page 5, line 21 with the following rewritten version:

According to the second aspect of the present invention, the roller 3 is made of a sintered alloy. The roller 3 made of a sintered alloy is obtained by pouring metal powder as a molding material into a mold, followed by pressing and sintering the metal powder. In the molding of the roller, the molding material is relatively stably pressed because pressure is applied to the end surface having a larger width (larger area). In this case, the molding material is relatively easily released from the mold because the end surface having a smaller width (smaller area) is the side to be detached from the mold.

Please replace the paragraph beginning at page 6, line 1 with the following rewritten version:

According to the third aspect of the present invention, the rollers 3 revolve in the cylinder bodies 25 and 26 to have a difference in rotational phase. Therefore, torque fluctuations caused in the cylinder bodies 25 and 26 are canceled. When the rollers 3 have the difference in rotational phase, different pressure fluctuations are caused in the cylinder bodies 25 and 26. Therefore, the cylinder bodies 25 and 26 apply different pressures to the partition plate 27 arranged between the cylinder bodies 25 and 26 and the elastic deformation

of the partition plate **27** is hard to reduce. In the present invention, however, since the rollers **3** are arranged such that their end surfaces having a smaller width face the partition plate **27**, the rollers **3** are less influenced even if the partition plate **27** is elastically deformed. Therefore, the rollers **3** smoothly revolve in the cylinder bodies **25** and **26**.

Please replace the paragraph beginning at page 6, line 11 with the following rewritten version:

According to the fourth aspect of the present invention, gas discharged through the high pressure ports **10** is temporarily retained in the airtight container **9**. Therefore, the airtight container **9** is at a high discharge pressure. The discharge pressure is applied to the end plates **7** and **8** arranged outside the cylinder bodies **25** and **26** such that the end plates **7** and **8** are warped toward the inside of the cylinder bodies **25** and **26**. Each of the rollers **3** is arranged such that larger one of the cut portions **3a** and **3b** faces the partition plate **27**. Since the influence of the oil is greater at the end surfaces having the larger cut portions **3a** and **3b** than at the end surfaces having the smaller cut portions **3a** and **3b**, the rollers **3** are pressed toward the end surfaces having the smaller cut portions **3a** and **3b**, i.e., toward the end plates **7** and **8**. As a result, the rollers **3** suppress the warp of the end plates **7** and **8** toward the inside of the cylinder bodies **25** and **26**.

Please replace the paragraph beginning at page 6, line 23 with the following rewritten version:

As described above, according to the first aspect of the present invention, the roller **3** is arranged such that one of the end surfaces having a larger width faces one of the plates **7** and **8** having the high pressure port **10** and the other end surface faces the other one of the plates **7** and **8**. Therefore, the internal and external spaces of the roller **3** are less likely to communicate with each other. As a result, even if the roller **3** is shared, there is no need of taking measures of reducing the diameter of the high pressure port to avoid the communication. Thus, the diameter of the high pressure port is determined without limitations on the degree of freedom and an increase in pressure loss by the high pressure port **10** is prevented.

Please replace the paragraph beginning at page 7, line 16 with the following rewritten version:

According to the second aspect of the present invention, the roller 3 is made of a sintered alloy. In the molding of the roller 3, the molding material is relatively stably pressed because pressure is applied to the end surface having a larger width (larger area). In this case, the molding material is relatively easily released because the end surface having a smaller width (smaller area) is the side to be detached from the mold.

Please replace the paragraph beginning at page 7, line 21 with the following rewritten version:

According to the third aspect of the present invention, the rollers 3 are arranged such that the rollers 3 have a difference in rotational phase and their end surfaces having a smaller width face the partition plate 27. Therefore, according to the present invention, torque fluctuations caused by the two cylinder bodies 25 and 26 included in the rotary fluid machine 1 are reduced and the influence by the elastic deformation of the partition plate 27 is also reduced. Thus, the rollers are operated with stability in the cylinder bodies 25 and 26.

Please replace the paragraph beginning at page 7, line 27 with the following rewritten version:

According to the fourth aspect of the present invention, gas discharged through the high pressure ports 10 is temporarily retained in the airtight container 9 and the rollers 3 are arranged such that the end surfaces having the smaller cut portions face the end plates 7 and 8. Therefore, according to the present invention, leakage of the gas from the cylinder bodies 25 and 26 through gaps between the rollers 3 and the end plates 7 and 8 is suppressed.

Please replace the heading at page 9, line 1 with the following rewritten version:
DETAILED DESCRIPTION OF BEST MODE FOR CARRYING OUT THE
INVENTION